

25/1/24

## Practical 2

Aim Study of different types of Network cables.

a) understand different types of network cable

1. unshielded Twisted Pair (UTP) cable
2. shielded Twisted Pair (STP) cable
3. Coaxial Cable
4. Fibre optic cable.

Cable type	Category	Maximum Data Transmission	Advantages / Disadvantages	Application Use
UTP	Category 3	10 bps	<u>Advantages</u> + cheaper in cost	10 Base-T Ethernet
	category 5	upto 100 Mbps	+ Easy to install as they have a smaller overall diameter.	Fast Ethernet, Gigabit Ethernet
	category 5e	1 Gbps	<u>Disadvantages:</u> + More prone to (EMI) electromagnetic interference and noise	Fast Ethernet, Gigabit Ethernet
STP	Category 6, 6a	10 Gbps	<u>Advantages</u> + Shielded + Faster than UTP. + Less susceptible to noise and interference	Gigabit Ethernet, 10G Ethernet (55m) widely used in data centres
SSTP	Category 7	10 Gbps	<u>Disadvantages</u> + Expensive + Greater installation effort.	Gigabit Ethernet, 10G Ethernet (100m)



Coaxial Cable	RG-6 RG-59 RG-11	10-100 Mbps	<ul style="list-style-type: none"> <li>+ High bandwidth</li> <li>+ Immune to interference</li> <li>+ Low loss bandwidth</li> <li>+ Versatile</li> </ul> <p><u>Disadvantages</u></p> <ul style="list-style-type: none"> <li>+ Limited distance</li> <li>+ cost</li> <li>+ size is bulky.</li> </ul>	<p>Speed of signal is 50% of television network.</p> <p>High speed internet connections</p>
Fibre optics Cable	Single mode Multi mode	100 Gbps	<p><u>Advantages</u></p> <ul style="list-style-type: none"> <li>+ High-speed</li> <li>+ High bandwidth</li> <li>+ High security</li> <li>+ Long distance</li> </ul> <p><u>Disadvantages</u></p> <ul style="list-style-type: none"> <li>+ Expensive</li> <li>+ Requires skilled installers</li> </ul>	<ul style="list-style-type: none"> <li>+ Maximum distance of fibre optic cable is around 100 meters</li> </ul>

b) Make your own Ethernet cross-over cable / Straight cable.

Tools and parts needed:

\* Ethernet Cabling. CAT5e is certified for gigabit support, but CAT5 cabling works as

well, just over shorter distances.

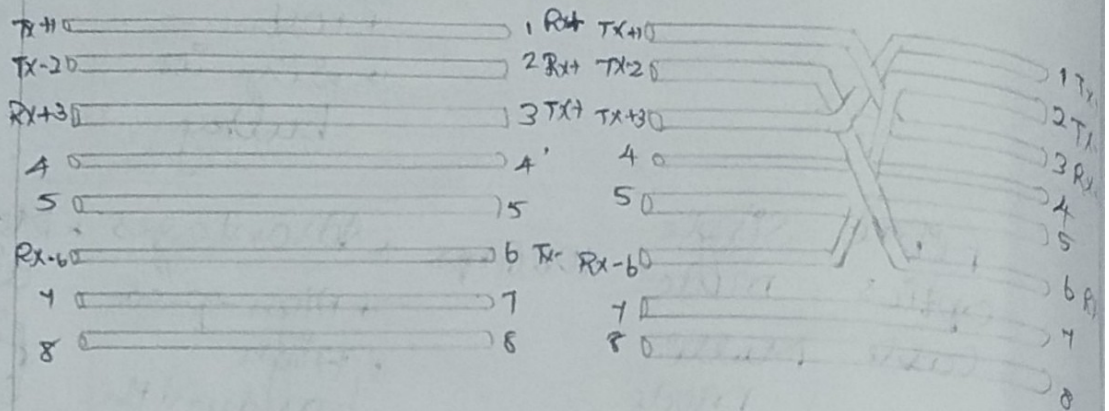
- \* A crimping tool. This is an all-in-one networking tool shaped to push down the pins in plug and strip and cut the shielding off cables.

- \* Two RJ45 plugs.

- \* optional two plug shields.

straight thru cable

X-Over cable.



Result:

Thus different types of network

1/8/20 Cables are studied.